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Green Cities PPP as a Method of Financing Sustainable Urban Development

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Abstract

Public-private partnership is one of the implementation methods of investment and delivery of public services. Along with civilization and economic development, economic entities are inclined towards investment projects in the light of new challenges, such as the development of social environment. A combination of economic, social and environmental factors enables organizations to ensure sustainability.

The purpose of this article is to show the scale and nature of public-private partnerships processes (PPP) in shaping the sustainable development of the region of Silesia. The basis for conclusions on the above subject is the study of PPP solutions as determinants shaping the sustainable development in Silesia. The study presents PPP projects implemented in the studied region for sustainable urban logistics.

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Keywords: public-private partnerships (PPP), urban finance, green infrastructure.

1. Introduction

Large cities strive to maximise their economic and social potential. The society expects modern cities to be eco-friendly and smart, taking advantage of all their unique features and qualities.

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The “green city” trend, complemented with the “smart city” one, paints a picture of a multifunctional place of work and rest with a good transport system. However, in order to have a city without traffic jams, with vast green areas and all modern amenities, it is necessary to completely redesign the solutions applied so far. In fact, development of a perfect green city necessitates building it from scratch.

In the case of development processes, the concept of increasing urban functionality requires design ideas, right social background and primarily - sources of financing any necessary investments.

Smart, eco-friendly cities are characterised by the following features:

- application of renewable energy,
- electric transportation,
- smart management of power consumption [city lights, traffic management],
- smart management of supplies,
- management of recycling and waste,
- rational use of available space (depending on city location and character),
- public safety (intelligent monitoring).

Each of the above elements may be implemented individually as well as within a larger, integrated project. Regardless of the implementation method, the sustainable city effect shall be achieved when its functionality is considerably increased within the particular area. Implementation of single elements may result in reduction of conventional energy consumption or reduction of car traffic and thus air pollution, but all these are merely elements that should be integrated in order to achieve the desired effect.

Financing green city projects is considered a challenge as it should ensure the following:

- implementation of integrated solutions (several projects implemented by different investors, using the same financing method),
- faster bank evaluation procedures,
- lower interest rates applied in case of projects implemented in particular sectors.

Integrated projects aiming at optimising numerous processes, including communication, transport and environment protection are interesting development possibilities for both public and private investors. However, their implementation necessitates cooperation of these two sectors not only during the planning, but also during the implementation phase of each project. One of the major problems and global limitations in this area is the lack of clear and effective principles of project implementation. Public-private partnership is currently considered one of the most interesting solutions in this respect.

2. PPP theory and advantages

Public-private partnership is a method of long-term cooperation of public and private sectors in implementation of projects aimed at provision of public services. The aim of the cooperation is to achieve mutual social and commercial benefits. According to the European Investment Bank, PPP is a general name defining all relations between the private sector and public organisations, aiming at application of private resources or experience to support the public sector in providing assets and services (EBI, 2006).

Implementation of revolving mechanisms, and the JESSICA mechanism in particular, was related to the possibility of stimulating the PPP market. As the investment effects prove, the assumption was correct. Revolving mechanisms may be perfect sources of financing PPP projects, combining social and economic expectations (Kościelniak & Górka 2012).

Public-private partnership agreements are regulated by the national and EU law (see Table 1).

Table 1: Public-private partnership law

Regulation area	Document
National law	Act of 19 December 2008 on public-private partnership. The Act defines the principles of cooperation between public and private partners implementing a common project, detailing the shares of responsibilities and risks of both parties.
	Act of 9 January 2009 on concession for construction work and services. The Act defines the principles and methods of concluding concession agreements for construction work and services.
	Act of 29 January 2004 - Public Procurement Law. The Act defines the principles and course of action in public procurement procedures, legal protection methods, controlling principles and authorities.
EU regulations	Guidelines for Successful Public-Private Partnerships published by the European Commission, General Directorate for Regional Policy in January 2003.
	Communication of 19 November 2009 from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on developing public-private partnerships.
	Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public works contracts. The Directive is based on the jurisdiction of the Court of Justice, in particular on the contract award criteria.
	Communication of 15 November 2005 from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on public-private partnerships and Community Law on Public Procurement and Concessions. The Communication presents different options concerning PPP policies, ensuring efficient competition and ensuring flexibility of solutions applied in innovative and complex projects.
	Interpretative communication of 5 February 2008 from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on the application of Community Law on Public procurement with respect to the institutionalized PPP (IPPP).
	Communication of 29 April 2000 from the Commission on Concessions in Community Law.
	European Parliament resolution on public-private partnerships and Community law on public procurement and concessions (2006/2043(INI)). The resolution presents the opinion of the Parliament on the award of contracts for public services to private partners as a result of PPP and concession agreements.
	Green paper on public-private partnerships and community law on public contracts and concessions, Brussels, 30.04.2004, COM (2004).
	The Green paper discusses PPP from the perspective of Community Law concerning public procurement and concession.

Source: own elaboration based on: Osborne S.:(2002)

The idea of public-private partnership may be understood very broadly. PPP is defined as all types of cooperation between the private and public sectors, aimed at public welfare or as partnership cooperation observed in the case of large projects aimed at developing public services and meeting public expectations. The main objective of PPP projects is the optimum performance of a public service. It may be possible due to the following:

- in the case of such projects, the public partner focuses on the “end product”, not on the necessary financial resources or subsequent project phases; it is an important factor as public entities usually possess little or no experience in the investment being the subject of PPP agreement,
- assuming integrated approach and applying the knowledge of the private partner results in the completion of a full chain of cause-effect project elements, instead of a number of individual, separately implemented project stages,
- PPP requires advanced risk management, considering the fact that the PPP key success factor is the share of risks ensuring that individual risks are managed by the party that can do it better and both parties bear the project risk within the scope corresponding to their share and involvement.

PPP investments may result in considerable benefits for both parties (see Table 2).

Table 2: Advantages resulting from PPP projects

Advantages for public partners	Advantages for private partners
Engagement of a private partner ensures partial financing of the project cost and thus lifts the burden off the public budget.	Possibility to implement projects characterised by high return on investment rate that would be otherwise impossible.
Private capital limits the risk of stopping construction due to lack of financing and increases the chance for improvement of the infrastructure.	Possibility of cooperation with the public sector broadens the knowledge and experience of the private partner who may later use them in other projects.
More modern technologies are applied in the case of projects implemented in public-private partnerships than in the case of public-only projects.	Marketing benefits.
Efficient project and HR management reduces the investment time and cost.	
Political pressures are reduced thanks to the involvement of the private sector.	
Marketing benefits, covering both the efforts of the local government to search for private investors and thus for external financing sources as well as encouragement of cooperation with the private sector.	

Source: own elaboration based on: Non-financial Benefits of PPP, www.mg.gov.pl

Several instruments are applied in financing municipal eco-investments (see Table 3).

Table 3. Main financial instruments in the main green urban sectors

	Transportation	Buildings	Water /Waste	Energy
Taxes	Property tax			
Fees and charges	Congestion charges Parking fees High Occupancy Toll lanes	Building permits	Tariffs and fees	Electricity user fees
Grants	General grants with environmental indicators, specific grants for environmental goods and services, matching grants			
PPPs	Concessions and Private Finance Initiatives (PFIs), energy performance contracts			
Land-based income	Development charges/impact fees Value capture tax Higher density building rights Tax increment financing			
Loans and bonds	Loans and green bonds			
Carbon finance	Clean Development Mechanism/Joint Implementation, voluntary carbon offsets			

Source: (Merk, 2012)

According to Merk¹, “a green focus on urban finance could mean property taxes that stimulate density, transportation fees that reduce car traffic, and fees that stimulate responsible water consumption. Public finance can also be used to leverage finance from private actors through loans, bonds and carbon markets; to create incentives

¹ MERK O. et al. (2012), Financing Green Urban Infrastructure, OECD Regional Development Working Papers, OECD Publishing, p. 19.

for them to invest in sustainable infrastructure related to new development; and to get them involved in partnerships so government can benefit from private sector knowledge and experience in greening infrastructure.”

3. PPP investment areas and their relation to green cities – selected results of empirical studies

35 projects to be implemented within public-private partnership agreements in Silesia were identified by the experts of City Consulting Institute Sp. z o.o. and Centrum Projektów Rewitalizacji S.A.

Project areas correspond to the characteristics of green cities as they concern transport, environment protection as well as modern housing developments. Some of the projects correspond to the basic needs of inhabitants and do not relate directly to the ideas of green cities or smart cities. The projects concern the following areas: environment protection, communication and public transport, sport, tourism and recreation, housing developments, regeneration, science and technologies.

The investment area of the above projects is very broad, which means that the needs of local governments exceed the basic infrastructure considerably. It is thus possible to plan investments outside public budgets, with the use of revolving mechanisms.

Broad spectrum of investment facilitates the development of optimum investment portfolio, balancing investment risk resulting from different development perspectives of particular sectors of the economy. The regional investment need is very high. Analysis of the projects points to the fact that the projects planned for implementation may bring profit both to the private and the public sector. The table below presents the value of projects to be implemented in particular sectors (see Table 4).

Table 4: Projects to be implemented in different sectors of the economy in Silesia

No	Sector	Value	% share	Quantity	% share	Average value of one project [PLN]
1	Environment protection	27 000 000	0.9	2	5.7	13 500 000
2	Transport and communication	365 000 000	12.1	5	14.3	73 000 000
3	Sport, tourism, recreation	1 591 457 000	52.9	12	34.3	132 62141
4	Housing developments	25 000 000	0.8	3	8.6	8 333 333
5	Regeneration	951 560 381	31.6	12	34.3	79 296 698
6	Science and technologies	48 930 000	1.6	1	2.9	48 930 000
7	Total	3 008 947 381	100.0	35	100.0	85 969 925

Source: own elaboration based on data gathered by City Consulting Institute Sp. z o.o. to develop the PPP-Silesia Report.

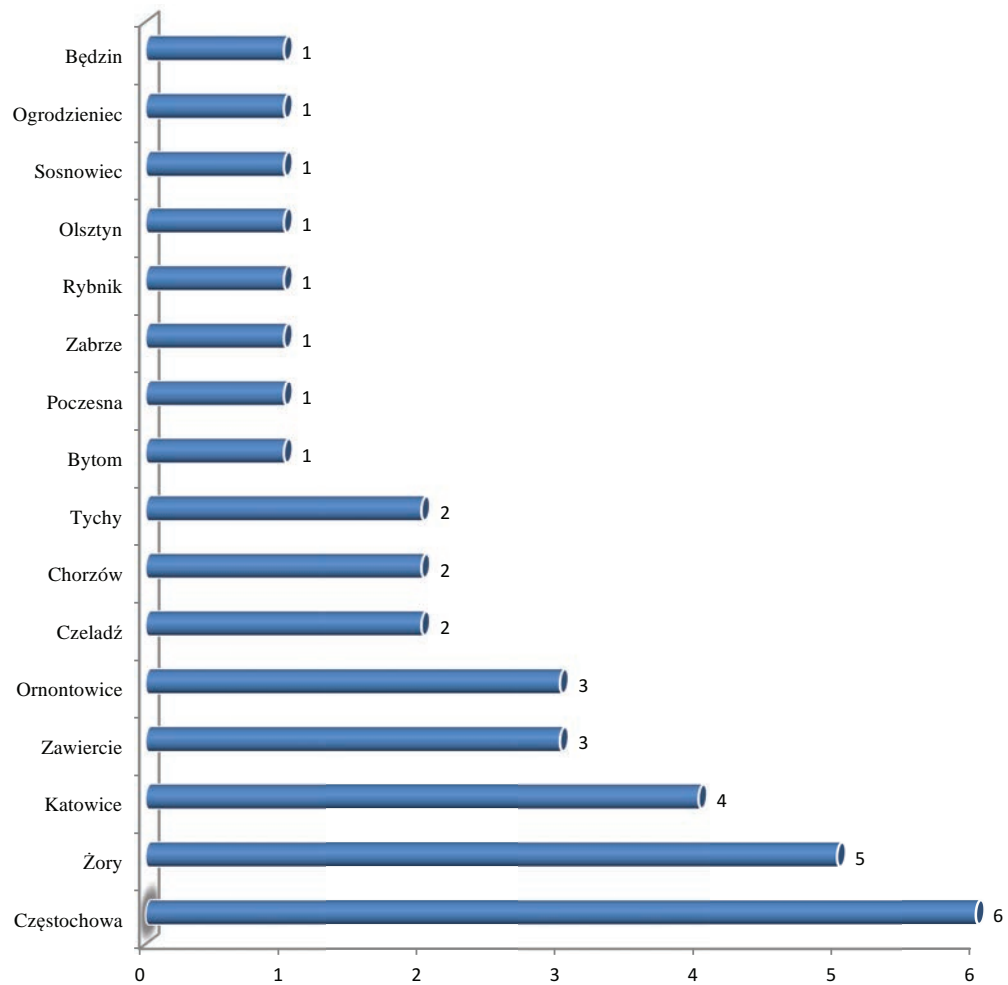
Major resources are to be invested in the area of sports, tourism and recreation. Urban regeneration projects take the second place, whereas transport and communication occupy the third one. Lower values are observed in the case of science and technology, environment protection and housing development projects.

The primary problem encountered is the time needed to conduct the full procedure of selecting the private project partner.

Legal regulations require a detailed procedure, related to both evaluation of the potential of all tenderers as well as the time needed to negotiate with them.

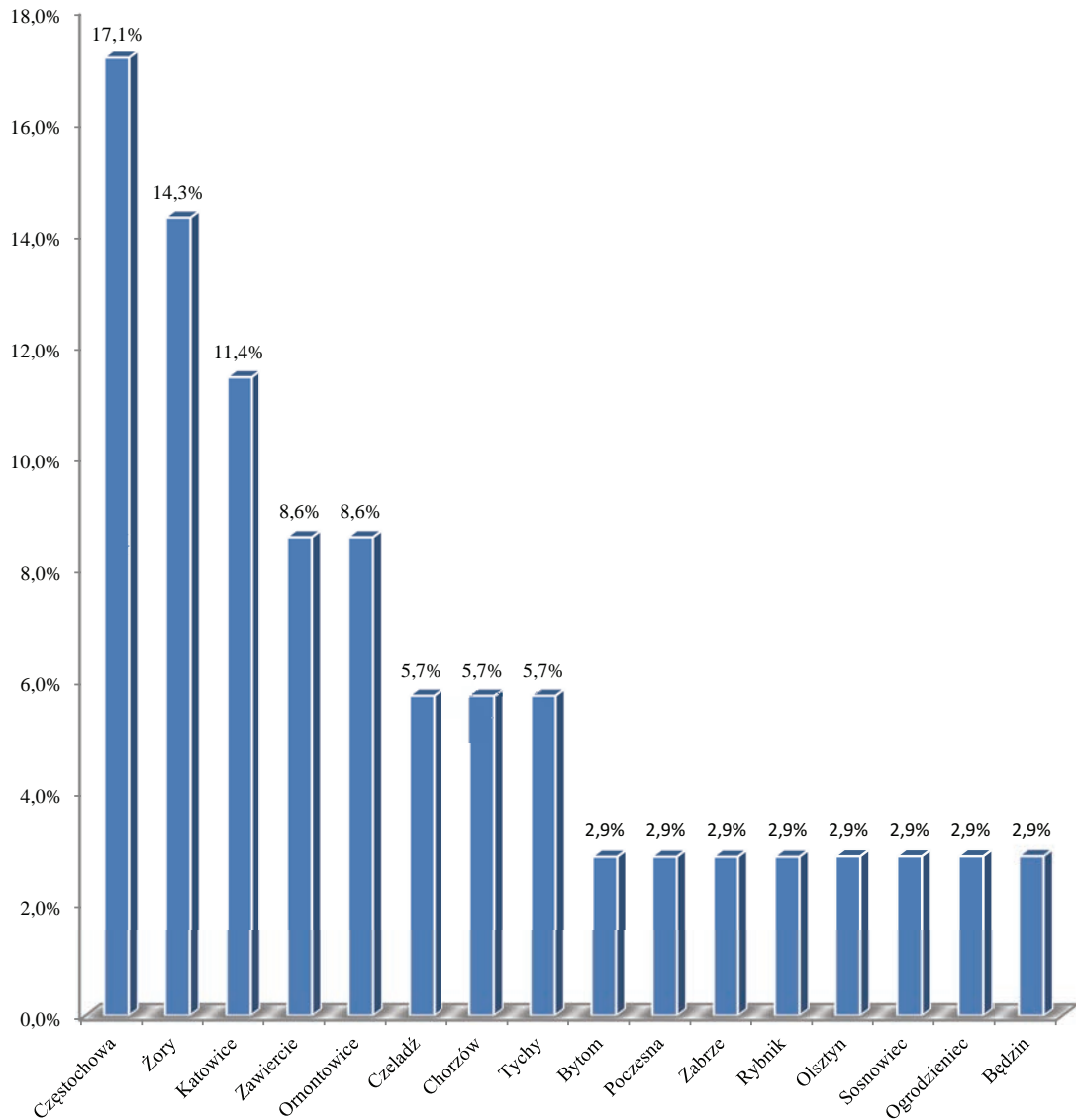
All these factors add to the fact that it is extremely difficult to prepare PPP projects within the frameworks and timelines of e.g. EU calls for applications.

As far as cities implementing PPP projects are concerned, Częstochowa has submitted 6 projects, Żory - 5 projects and Katowice - 4 projects. The above municipalities have submitted 43% of all projects.



Graph 1: Number of projects submitted by Silesian municipalities (data from 2014)

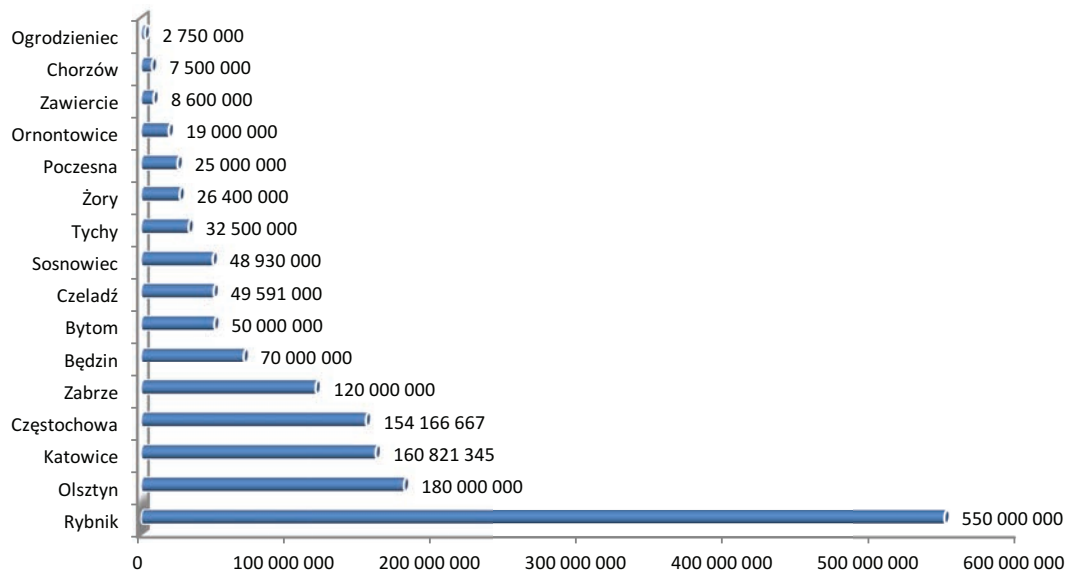
Source: own elaboration based on data gathered by City Consulting Institute Sp. z o.o. to develop the PPP-Silesia Report.



Graph 2: Percentage share of Silesian municipalities in PPP projects

Source: own elaboration based on data gathered by City Consulting Institute Sp. z o.o. to develop the PPP-Silesia Report.

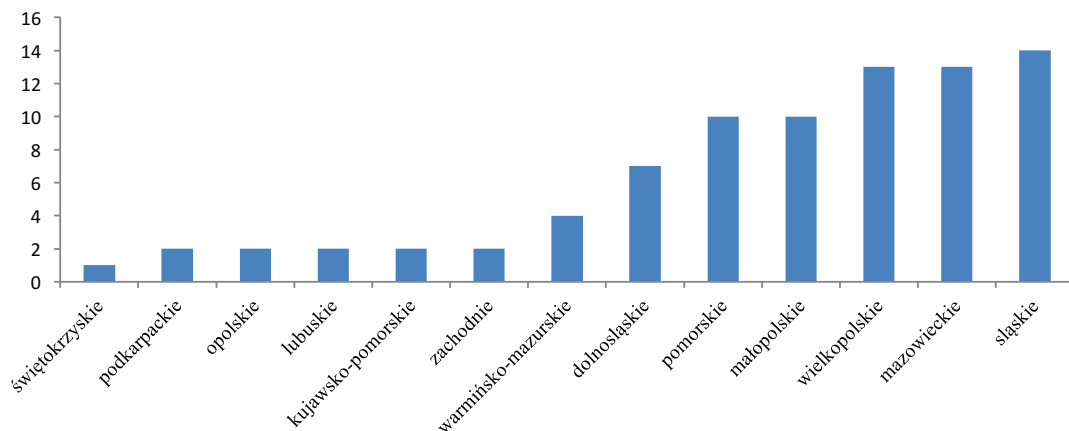
The average project value is calculated by dividing the overall value of each municipality total project value by the number of projects submitted. In this case, the leading municipalities are: Rybnik, Olsztyn, Katowice.



Graph 3: Average project value in Silesian municipalities [PLN]

Source: own elaboration based on data gathered by City Consulting Institute Sp. z o.o. to develop the PPP-Silesia Report.

The Silesian voivodeship is the PPP leader among all Polish regions. According to the data presented by the Ministry of Economy² the highest number of PPP contracts was signed in Silesia (see Graph 4).



Graph 4. Number of PPP contracts in years 2009-2014 in Poland

Source: PPP Market Report (2014) http://www.mg.gov.pl/files/upload/23964/Raport_rynek_PPP_2014.pdf

² http://www.mg.gov.pl/files/upload/23964/Raport_rynek_PPP_2014.pdf

The above results of empirical analyses may be the basis for further studies on sustainable urban management. The research will necessitate considering characteristic features of particular actions to be undertaken in different areas of sustainable urban development as well as diversification of their financing sources.

Recent research proves the considerable potential of the method of finding investment funding outside municipal budgets. Therefore, the local government investment financing model used so far should be completely reconsidered. Cutting the availability of structural EU resources is going to force local authorities to search for external financing in order to improve the financial results and budget ratios of their municipalities. Currently, external resources constitute the prime source of investment financing. Lack of them may disturb the process of dynamic economic growth, especially in the case of less developed regions.

It is thus necessary to undertake actions aimed at facilitating external financing processes, including PPP procedures. Lack of such actions may result in a limited number of investment projects and thus negative economic impacts. The idea of Green Cities and especially urban freight is of considerable importance in this respect. Considering the growing impact of the sharing economy, local governments should consider the possibility of cooperation with private investors in this area (both with regard to the transport of goods and people). These projects may have great potential for return on investment and are impossible to be implemented by one of these parties only. Moreover, the growing importance of sharing economy that is estimated to amount to USD 335 million in 2025³ should also increase the popularity of Green City projects. One condition is for local governments to find sources of financing these.

Summary

PPP market of Silesia is not directly related to the idea of green cities. However, taking into account the character and scope of investment activity, one can conclude that public-private partnership is a very advantageous method of green project implementation. The basic advantages include the possibility of cooperation between the land owner (local government) and the private investor. In result, the character of PPP projects may be integrated and concern several areas such as urban transport or environment protection. In conclusion, it should be stated that the Silesian PPP market is characterised by a large number of projects co-financed from the EU resources, good project location features (large number of inhabitants) and anticipated introduction of revolving financial mechanisms as attractive sources of financing profitable projects, including green investments.

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